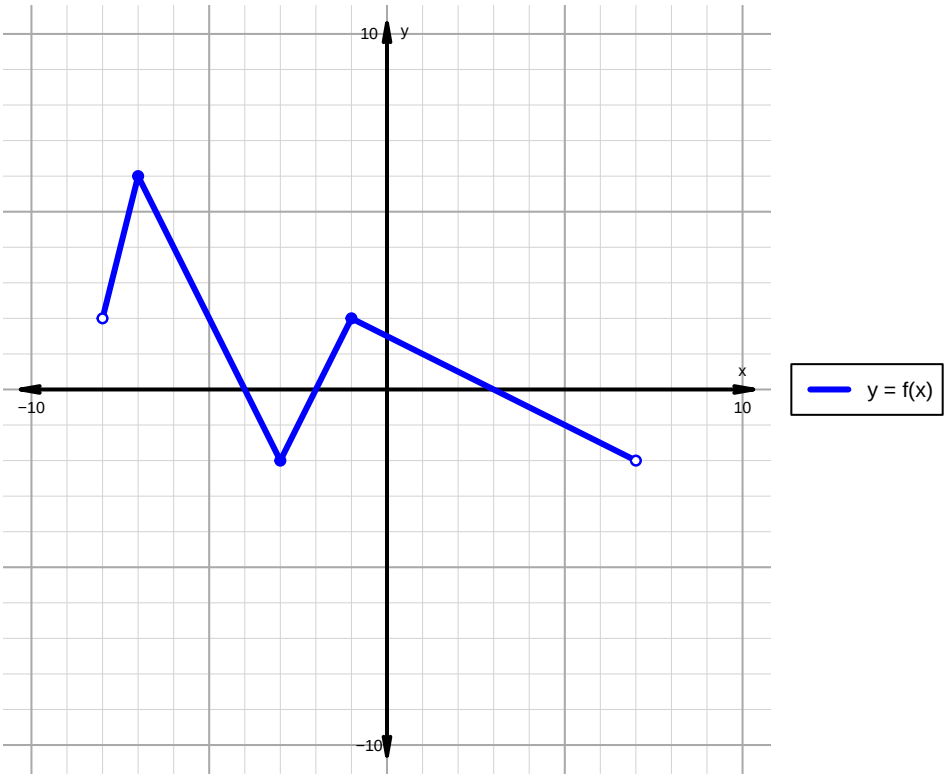
Name: Date:

Intervals, Transformations, and Slope Solution (version 26)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-4) \cup (-2,3)$
Negative	$(-4,-2) \cup (3,7)$
Increasing	$(-8,-7) \cup (-3,-1)$
Decreasing	$(-7,-3) \cup (-1,7)$
Domain	$(-8,7)$
Range	$(-2,6)$

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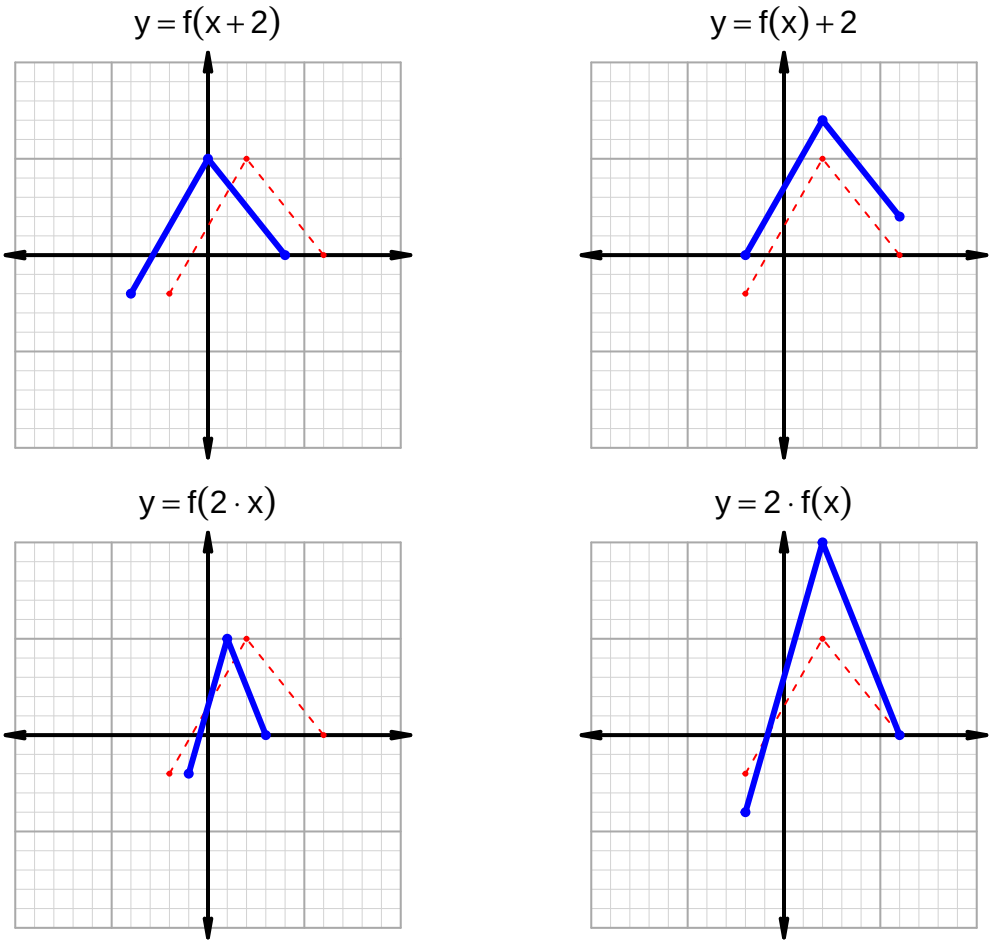
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 34$ and $x_2 = 70$. Express your answer as a reduced fraction.

x	$g(x)$
34	49
49	70
70	81
81	34

$\frac{f(70)-f(34)}{70-34} = \frac{81-49}{70-34} = \frac{32}{36}$

The greatest common factor of 32 and 36 is 4. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{9}$$